THE SOUTH AFRICAN MUSEUM'S *MEIRING NAUDE* CRUISES

PART 7

MARINE ISOPODA

By

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(With 21 figures and 1 table)

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ABSTRACT

Excluding the Anthuridea, twenty-one species of isopods are recorded from deep water off the Natal coast, including fourteen new records. The latter include one new genus, *Spinarcturus*, and ten new species. These are *Microarcturus biserialis*, *M. youngi*, *Neastacilla longispina*, *Spinarcturus natalensis*, *Excirolana bicornis*, *Cirolana caeca*, *Serolis brinki*, *Haploniscus gernekei*, *Eurycope glabra*, and *Ilyarachna wolffi*. Five endemic South African species are also recorded, as well as *Bathycopea typhlops*, previously only known from the coast of Ireland.

CONTENTS

INTRODUCTION

The present paper forms part of a series, based on material collected by the South African Museum during the 1975, 1976 cruises off the Natal coast on the R/V *Meiring Naude*. For the scope of, and the background to this programme, as well as for all station data, the reader is referred to Louw (1977).

The Anthuridea, of which about seven species were collected, are not dealt with, and will form the subject of a future paper.

The following abbreviations are used throughout this paper: SAM—South African Museum catalogue number; SM—*Meiring Naude* Station numbers; TL—total length; ovig.—ovigerous; juv.—juvenile.

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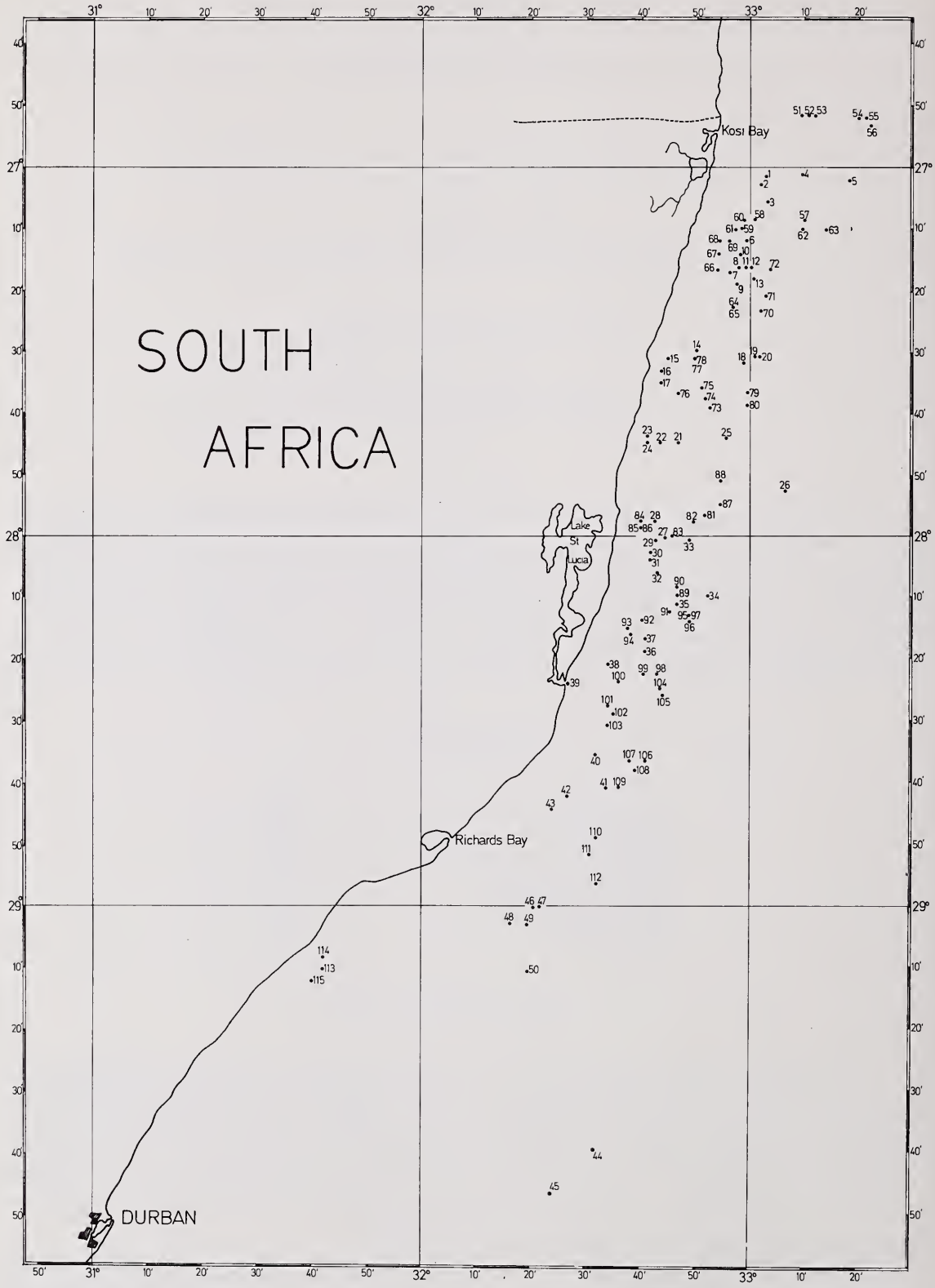

Fig. 1. Map showing *Meiring Naude* 1975, 1976 stations.

SPECIES LIST

Material not identified to specific level is either damaged or immature.

	SM Station	♂♂	♀♀	ovig. ♀♀	Juvs
SUBORDER VALVIFERA					
Family **Arcturidae**					
**Microarcturus biserialis* sp. nov.	109	3	—	—	—
Microarcturus oudops (Barnard)	103	2	4	4	—
**Microarcturus youngi* sp. nov.	86	12	5	3	±50
	103	8	10	—	37
**Neastacilla longispina* sp. nov.	86	2	—	3	3
**Spinarcturus natalensis* gen. et sp. nov.	86	4	2	3	2
	103	1	—	—	2
SUBORDER FLABELLIFERA					
Family **Cirolanidae**					
**Excirolana bicornis* sp. nov.	86	4	6	—	7
**Cirolana caeca* sp. nov.	78	2	4	4	—
Cirolana imposita Barnard	16	1	—	—	—
	23	1	—	—	—
Family **Sphaeromatidae**					
**Bathycopea typhlops* Tattersall	103	2	3	1	—
Family **Serolidae**					
**Serolis brinki* sp. nov.	103	2	3	1	—
Family **Cymothoidae**					
Nerocila sp.	107	—	—	—	1
SUBORDER GNATHIIDEA					
Family **Gnathiidae**					
Gnathia sp.	86	±20	±20	±20	±20
SUBORDER ASELLOTA					
Family **Stenetriidae**					
**Stenetrium abyssale* Wolff	86	1	—	1	—
Stenetrium dalmeida Barnard	86	1	—	—	—
Stenetrium dagama Barnard					
Family **Haploniscidae**					
**Haploniscus gernekei* sp. nov.	86	3	3	—	—
	103	9	4	—	—
Family **Ischnomesidae**					
Ischnomesis sp.	6	2 fragments			
Family **Eurycopidae**					
**Eurycope glabra* sp. nov.	60	—	1	—	—
	103	1	—	—	—
Family **Dendrotionidae**					
**Acanthomunna spinipes* (Vanhöffen)	86	4	8	3	—
	103	2	1	—	—
Family **Ilyarachnidae**					
**Ilyarachna wolffi* sp. nov.	86	4	—	—	—
	103	2	—	—	—
Ilyarachna sp.	103	—	2	—	—

*New Record

SYSTEMATIC DISCUSSION

Family **Arcturidae**

Microarcturus biserialis sp. nov.

Fig. 2

Description

Body elongate, slender, widest at pereionites II and III; head fused with pereionite I, anterior margin concave, anterolateral corners acute, eyes lacking, one pair small submedian tubercles anterior to submedian pair dorsal spinose processes; lateral margin of head incised. Coxae of pereionites II and III acute, of pereionites III to VII with two or three smaller points. Each pereionite possessing dorsal submedian pair of spinose processes and broader apically acute lateral process. Pleon consisting of three fused segments plus pleotelson, former each marked by a pair of submedian spines; pleotelson apically acute, with acute lateral tooth at about midpoint.

Antennule not reaching midpoint of second antennal peduncle segment.

Three distal segments of antennal peduncle becoming progressively longer.

Mandibles, maxillae and maxilliped typical of the genus.

Pereiopod I shorter than following pereiopods, with numerous serrate spine-like setae.

Pereiopods II to IV slender, all segments with elongate simple setae on ventral surface.

Pereiopods V to VII more robust, dactyli, propodi, carpi, meri and distal part of ischia with dense ventral pile of short setules, propodi and carpi with few fringed ventral spines.

Penial process with distal third of rami separate, tips truncate.

Pleopod 1 with endopod about half length of exopod, distally rounded, bearing simple setules; exopod apically curved, with only two distal fringed setae; about twenty simple spines on outer margin, broad furrow on anterior face. Pleopod 2 rami similar, distally rounded/truncate, stylet on endopod only slightly longer than ramus, proximally stout, tapering distally, with small spines on inturned distal flanges.

Material

Holotype SAM–A15467 1 ♂ TL 5,9 mm SM 109 28°41,0′S 32°36,8′E 1 300 m
2 ♂♂ TL 5,9 mm SM 109

Remarks

The structure of the male pleopods 1 and 2, the mouthparts, and pereional appendages leave no doubt that the present species belongs to the genus *Microarcturus*, in spite of the lack of eyes and the relatively short exopod of pleopod 1. The dorsal sculpturing resembles that found in the males of *M. ornatus* Kensley, 1975, and *M. similis* (Barnard), but neither of these has

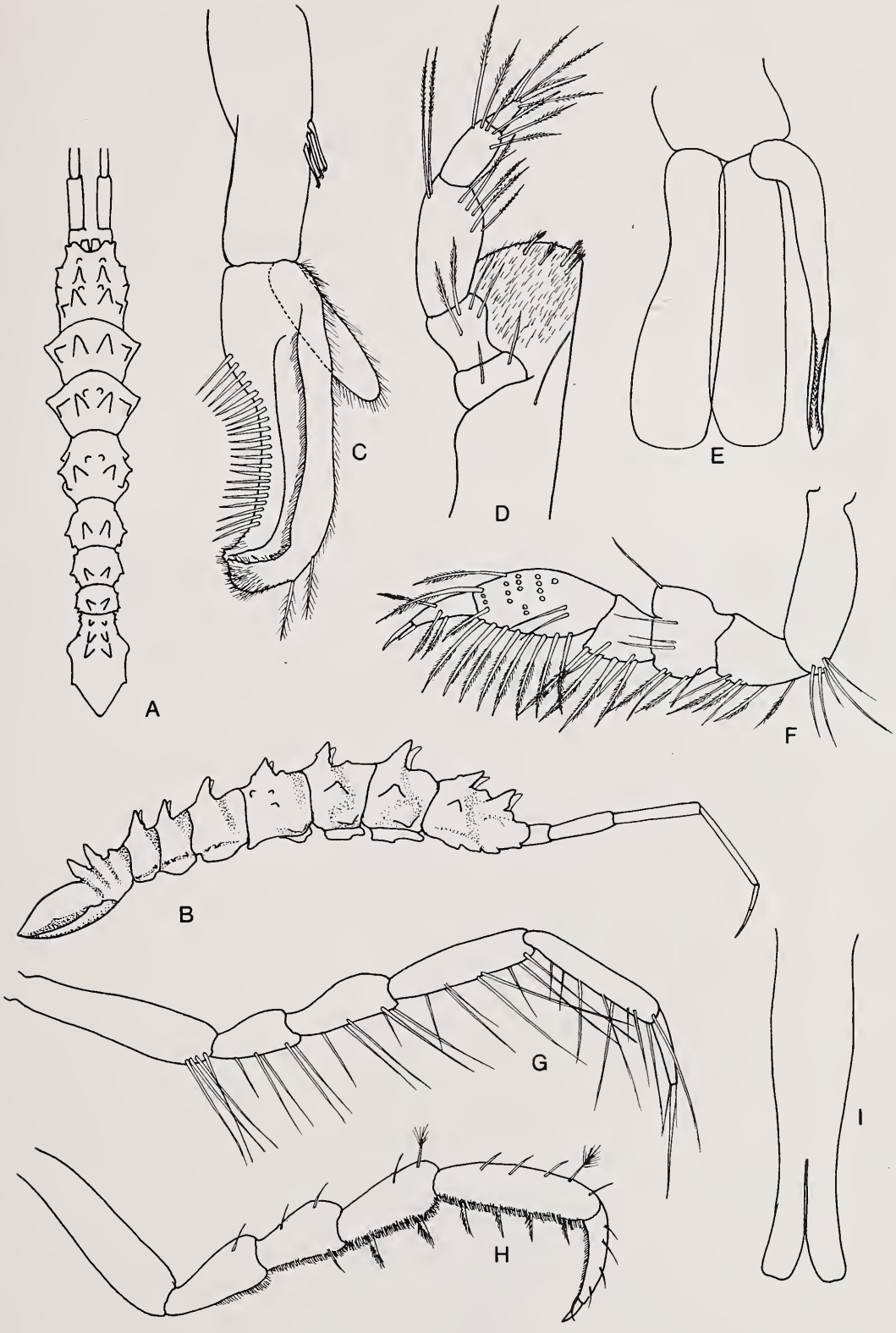

Fig. 2. *Microarcturus biserialis* sp. nov.
A. ♂ dorsal view. B. ♀ lateral view. C. Pleopod 1 ♂. D. Maxilliped. E. Pleopod 2 ♂. F. Pereiopod I. G. Pereipod II. H. Pereiopod VII. I. Penis.

the double row of spines as well developed on the last three pereionites.

The specific name '*biserialis*' is derived from the double row of prominent dorsal spines on the pereion and pleon.

Microarcturus oudops (Barnard)

Fig. 3

Neoarcturus oudops Barnard, 1914: 214, pls 18c, 19b; 1920: 397; 1940: 508. Nordenstam, 1933: 115.

Previous records

Off Cape Point.

Material

SAM–A15472 2 ♂♂ 4 ♀♀ 4 ovig. ♀♀ SM 103

Remarks

Barnard (1914) based the new genus *Neoarcturus* on several features, including the non-geniculate body, the non-elongate fourth pereionite, distinct coxae, pleon of four fused segments, and the antennal flagellum of three articles. All these features apply equally to *Microarcturus*. Kensley (1975) characterized

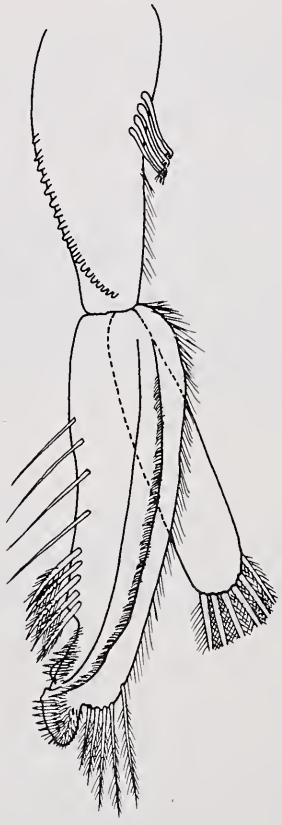

Fig. 3. *Microarcturus oudops* (Barnard) Pleopod 1 ♂.

Microarcturus by incised lateral margins of the head, dorsolateral eyes, first pereionite completely fused to head, two or three pleonal segments anterior to the pleotelson, and the first pleopod of the male with the inner ramus more than half the length of the outer. All these features are found in *M. oudops*. Further, although Barnard characterized *Neoarcturus* as being blind and possessing three pairs of oostegites, four pairs of oostegites are present, as are eyes; these latter are, however, very weakly pigmented. There is thus no justification for placing *oudops* in a genus separate from *Microarcturus*. The relative length of the inner ramus of the first pleopod of the male cannot be used as a criterion for generic separation as this shows a range from short in *M. biserialis* to fairly long in *M. youngi*. The first pleopod of this species is refigured.

Microarcturus youngi sp. nov.

Fig. 4

Description

Female. Body with numerous small tubercles; widest at pereionites II and III. Head with anterolateral corners subacute, with submedian ridges. Eyes large, lateral. Coxae indistinct, of pereionite I ventrally directed, tridentate; coxae of pereionites II and III expanded laterally, convex in outline; coxa of pereionite IV rectangular. Pereionites V to VII shorter and narrower than preceding ones. Pleon consisting of one indistinct and two distinct segments plus pleotelson. Latter broad, terminally subacute, with rounded lateral tooth.

Antennule reaching to midpoint of second antennal peduncle segment. Antennal peduncle 4-segmented, two basal segments together equal in length to third segment, latter slender, slightly shorter than fourth segment; flagellum of two articles with slender terminal spine.

Mandibles, maxillae and maxilliped typical of the genus.

Pereiopod I shorter than following pereiopods, with numerous serrate spine-like setae.

Pereiopods II to IV relatively slender, with numerous slender setae.

Pereiopods V to VII more robust, propodi, carpi and meri with dense very short setae on ventral surface plus several widely spaced spines, those on propodus barbed.

Male. Body parallel-sided, cylindrical, pereionites varying in sculpture from granular to almost smooth. Pleon with pair of large subconical processes at base.

Penial rami fused for three-quarters of length, tips diverging. Pleopod 1 basis with rounded proximal flange, and fourteen peg-like processes; inner ramus shorter than outer, distally rounded/truncate; outer ramus with apex produced and bent, numerous spines on outer margin, broad furrow on anterior face, ten plumose setae distally.

Pleopod 2 with stylet of endopod stout, cylindrical, slightly convoluted apically.

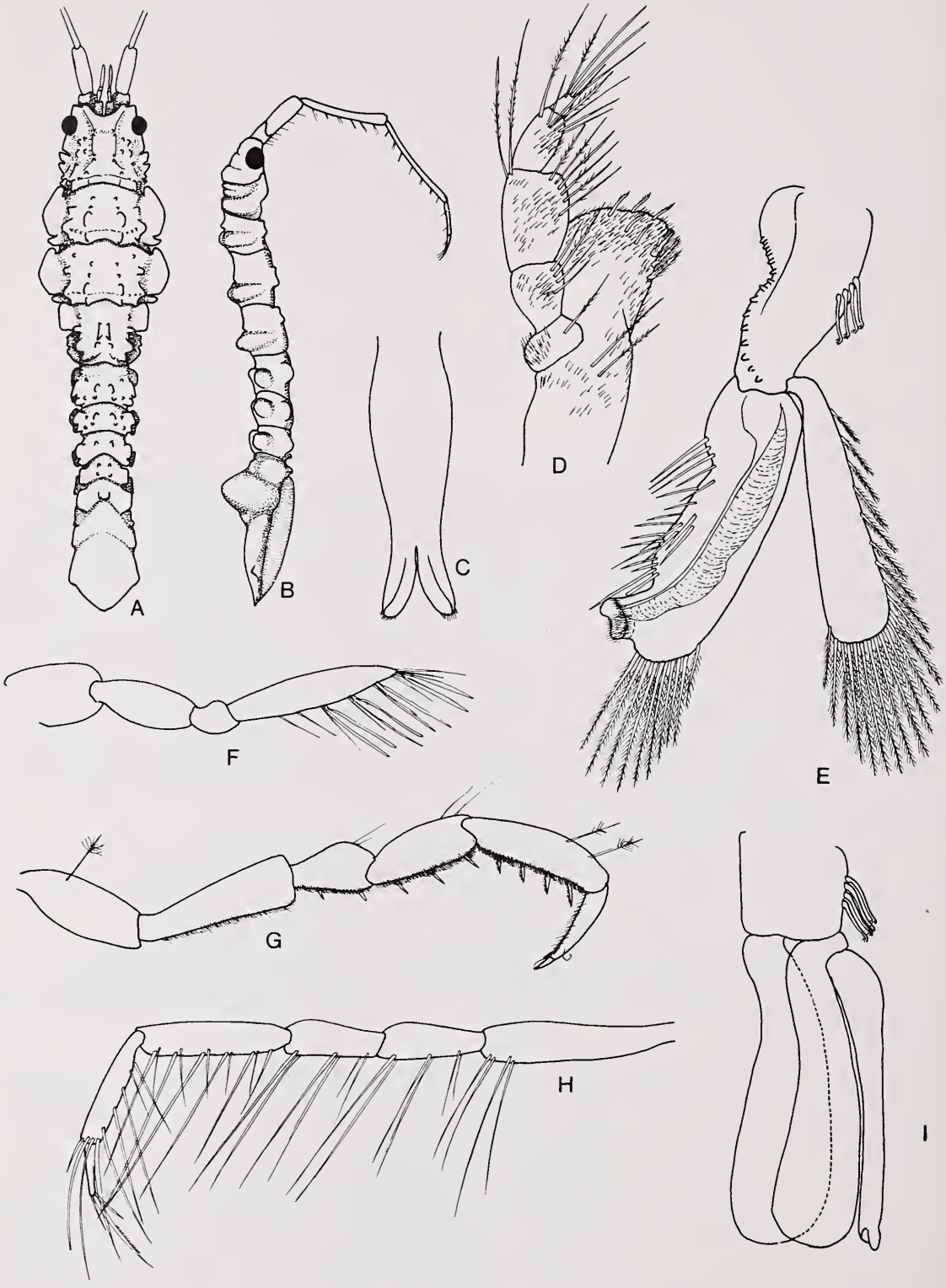

Fig. 4. *Microarcturus youngi* sp. nov.
A. ♀ dorsal view. B. ♂ lateral view. C. Penis. D. Maxilliped. E. Pleopod 1 ♂. F. Antennule. G. Pereiopod VII. H. Pereiopod II. I. Pleopod 1 ♂.

Material

Holotype SAM–A15465 1 ovig. ♀ TL 5,8 mm SM 86 27°59,5′S 32°40,8′E 550 m

Allotype SAM–A15465 1 ♂ TL 6,0 mm SM 86

12 ♂♂ 5 ♀♀ 3 ovig. ♀♀ 50 juvs SM 86

SAM–A15466 8 ♂♂ 10 ♀♀ 37 juvs SM 103

Remarks

M. youngi is obviously closely related to the group of species including *M. ornatus* Kensley, *M. dayi* Kensley, and *M. similis* (Barnard), in which the basic plan and sculpture of the males and females are similar. Each, however, may be distinguished by details of the sculpture. The most distinctive feature of *M. youngi* is the very prominent pair of bosses at the base of the pleotelson in the male.

The species is named for Mr D. Young, first officer of the R/V *Meiring Naude*.

Neastacilla longispina sp. nov.

Figs 5–6

Description

Female. Body slender, elongate. Head and first pereionite fused, fusion indicated by shallow furrow; eyes large, lateral; pair of dorsal spines and few

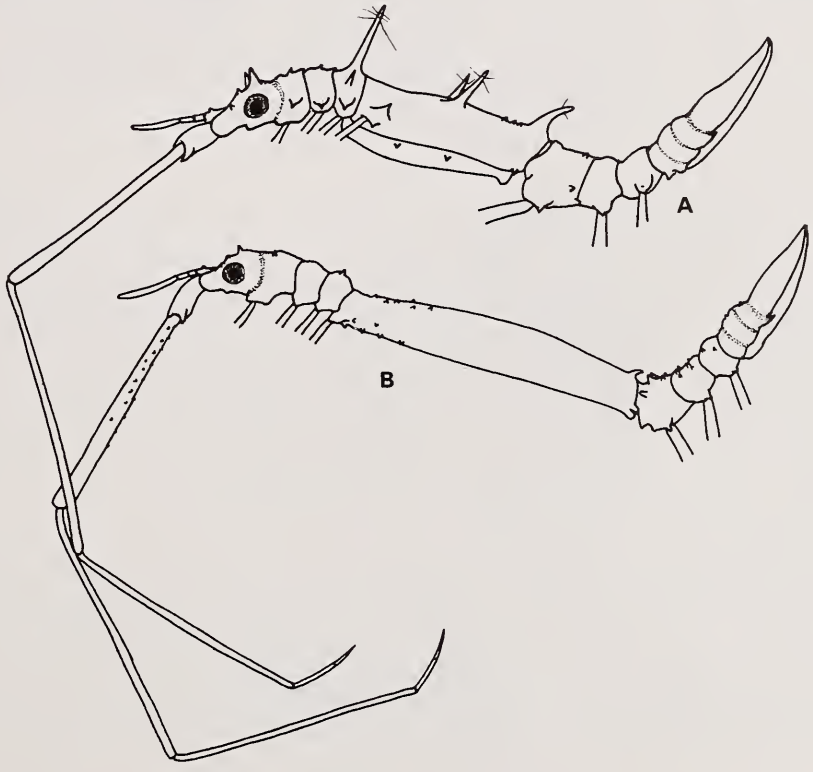

Fig. 5. *Neastacilla longispina* sp. nov.
A. Ovigerous ♀ lateral view. B. ♂ lateral view.

small tubercles present. Pereionites I and II with small dorsal spine and spinose lateral process. Pereionite II with single very strong dorsal spine, smaller spine between dorsal spine and spinose lateral process. Pereionite IV elongate, with pair of strong submedian dorsal spines at midpoint, and single slightly hooked median dorsal spine on posterior margin. Pereionite V with few small tubercles and spinose coxa. Pleon consisting of three fused pleonites plus pleotelson, segments indicated by shallow furrows; spinose lateral process on third pleonite. Pleotelson with distal half tapering, apically acutely rounded. Antennule consisting of 3-segmented peduncle, basal segment with small rounded dorsal process; flagellum of single article reaching beyond basal antennal segment.

Antenna longer than the total body length, basal segment short, with spinose distal process; following three segments very elongate, slender, flagellum

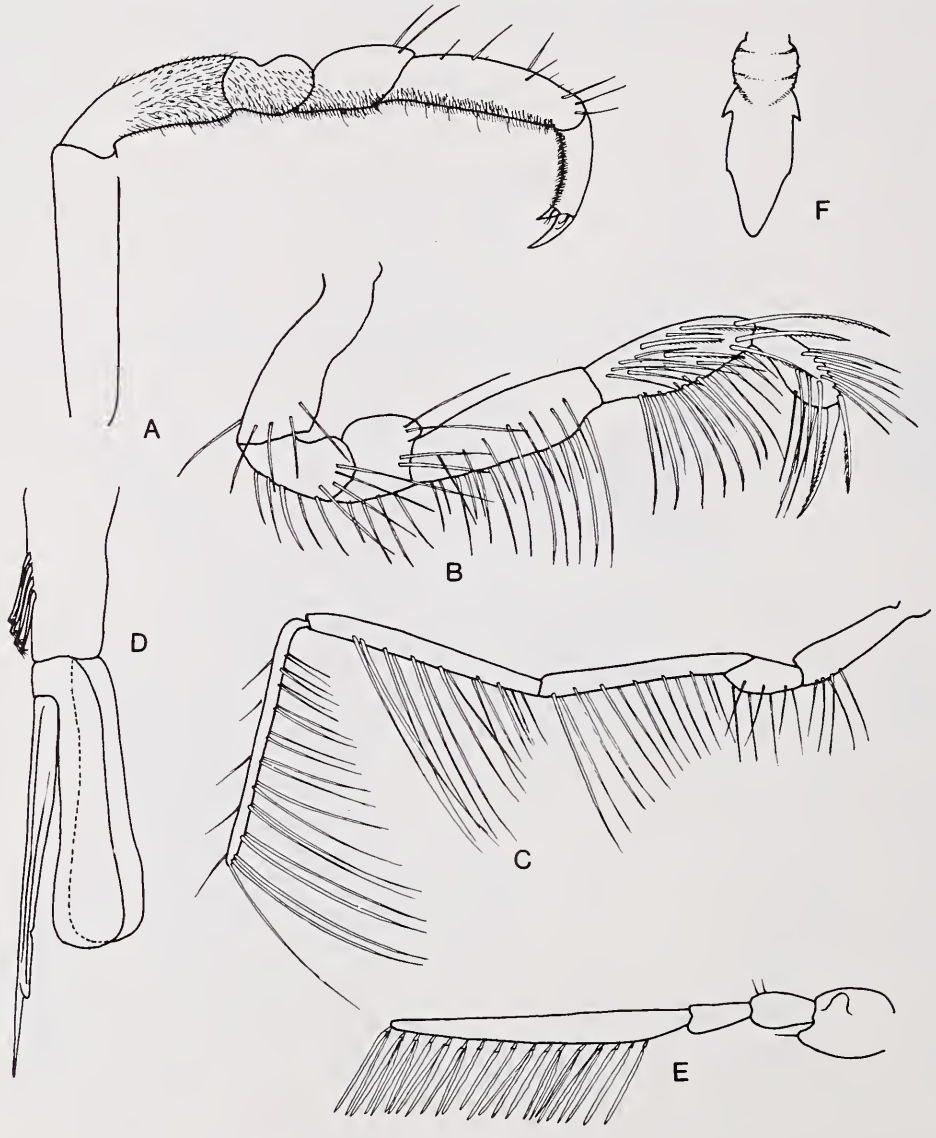

Fig. 6. *Neastacilla longispina* sp. nov.
A. Pereiopod VII. B. Pereiopod I. C. Pereiopod II. D. Pleopod 2 ♂. E. Antennule ♂. F. Pleotelson ♂.

short, of three articles, terminal article very short.

Mouthparts typical of the genus.

Pereiopod I shorter than following pereiopods, dactylus distally rounded/truncate, with strong terminal serrate spine; all segments bearing numerous simple setae; serrate spines also present on dactylus and propodus.

Pereiopods II to IV slender, elongate, dactyli absent, remaining segments bearing elongate simple setae.

Pereiopods V to VII becoming shorter posteriorly, more robust than preceding pereiopods, dactyli with two short apical claws, numerous fine setules on all segments except basis, especially concentrated on ventral surfaces.

Male. Pereionite IV more elongate than in female; head and pereionites with few scattered tubercles; no elongate dorsal spines as in female. Antennular flagellum relatively longer than in female.

Antenna with second peduncular segment with small scattered tubercles.

Pleotelson with slight point at lateral midpoint.

Pleopod 1 with rami of equal length, with elongate distal plumose setae; exopod with three elongate proximal setae, endopod with proximal indentation.

Pleopod 2 rami of equal length, with distal elongate plumose setae; endopod with stylet at base of inner margin extending well beyond rami, apically acute and slender.

Material

Holotype SAM–A15459	1 ♂	TL 10,5 mm	SM 86	27°59,5′S 32°40,8′E 550 m
Allotype SAM–A15459	1 ♀	TL 8,3 mm	SM 86	
	1 ♂	2 ♀♀ 3 juvs	SM 86	

Remarks

The present species bears little resemblance to the three species of *Neastacilla* hitherto recorded from South African waters, but most closely resembles *Astacilla attenuata* Hale, 1946, from New South Wales. *N. longispina* differs from the Australian species especially in possessing dorsal elongate spines on the pereion, and in having more elongate antennae.

The specific name is derived from the dorsal spines of the female.

Spinarcturus gen. nov.

Diagnosis

Arcturid possessing a geniculate body; first pereionite not fused with the head; dorsolateral eyes; antennae shorter than the total body length; fourth pereionite not elongate; anterior four pairs of pereiopods unspecialized, not differentiated from the posterior three pairs; pleopod 1 of the male relatively unspecialized, not furrowed on anterior face; stylet of pleopod 2 of the male apically simple.

Type species of the genus *Spinarcturus natalensis*.

The generic-name is derived from the numerous spines of the body.

Spinarcturus natalensis sp. nov.

Figs 7–8

Description

Male. Body elongate, geniculate, with numerous short fine setules entrapping debris. Head with concave anterior margin, not fused with pereionite I. Latter bearing pair of slender spines. Pereionites II to IV with two pairs of dorsolateral spines. Pleon consisting of three fused segments, first pleonite unarmed, second pleonite with one pair dorsolateral spines, third pleonite with pair strong proximolateral spinose processes, rest of segment smooth, convex, terminally bluntly rounded. Coxae not dorsally visible. Eyes dorsolateral.

Antennule 4-segmented, terminal article elongate, bearing aesthetascs.

Antenna shorter than body, peduncle consisting of two short proximal segments and two more elongate distal segments, plus flagellum of three articles, slender terminal spine present; all segments with scattered setae. Mandible with tridentate incisor, tridentate lacinia, four setae in row, broad truncate molar process with four stout spines on ventral margin. Maxilla 1 with three fringed setae on inner ramus, several simple spines on outer ramus.

Maxilla 2 with both lobes of outer ramus tipped with two sparsely fringed

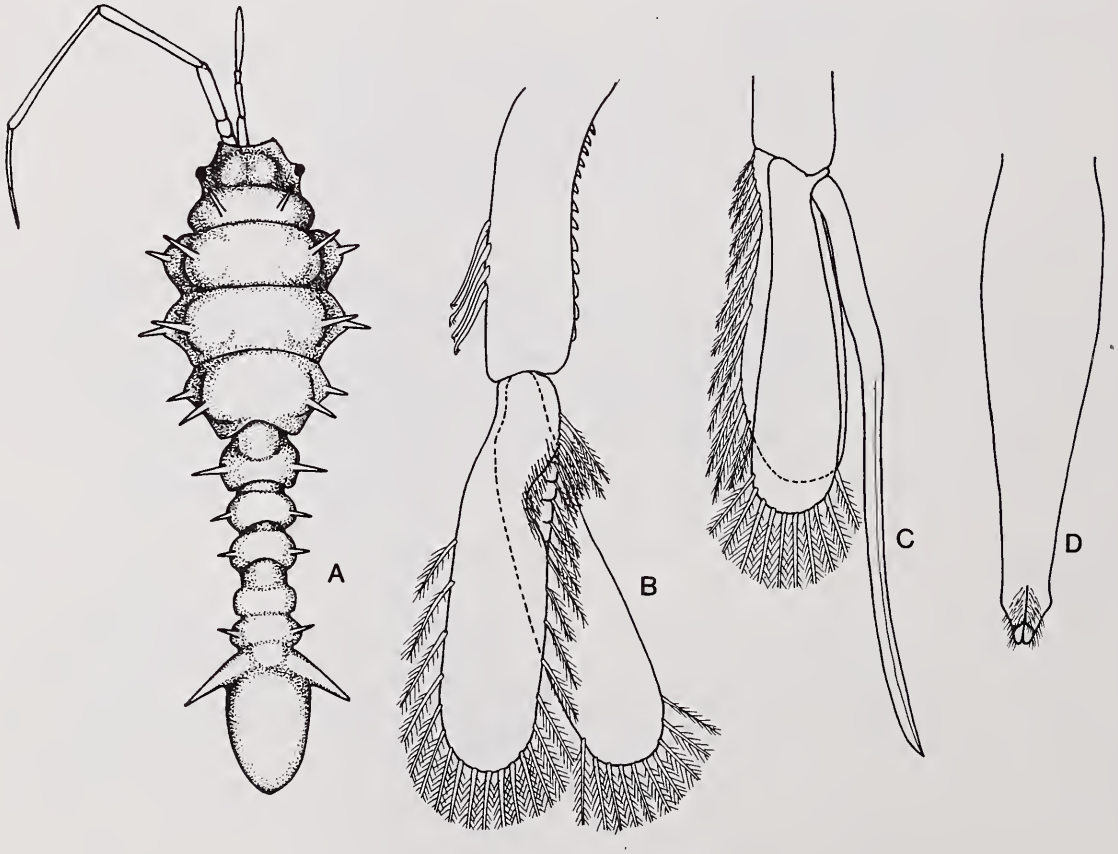

Fig. 7. *Spinarcturus natalensis* gen. et sp. nov.
A. ♂ dorsal view. B. Pleopod 1 ♂. C. Pleopod 2 ♂. D. Penis.

setae, inner ramus with about ten fringed setae.

Maxilliped with several fringed setae on four distal palp segments and on a endite.

Pereiopod I shorter than following pereiopods, dactylus with strong terminal spine, smaller secondary spine, and several fringed spines, propodus with many fringed spines; carpus, merus, and ischium with few ventral fringed spines and numerous fine short setules.

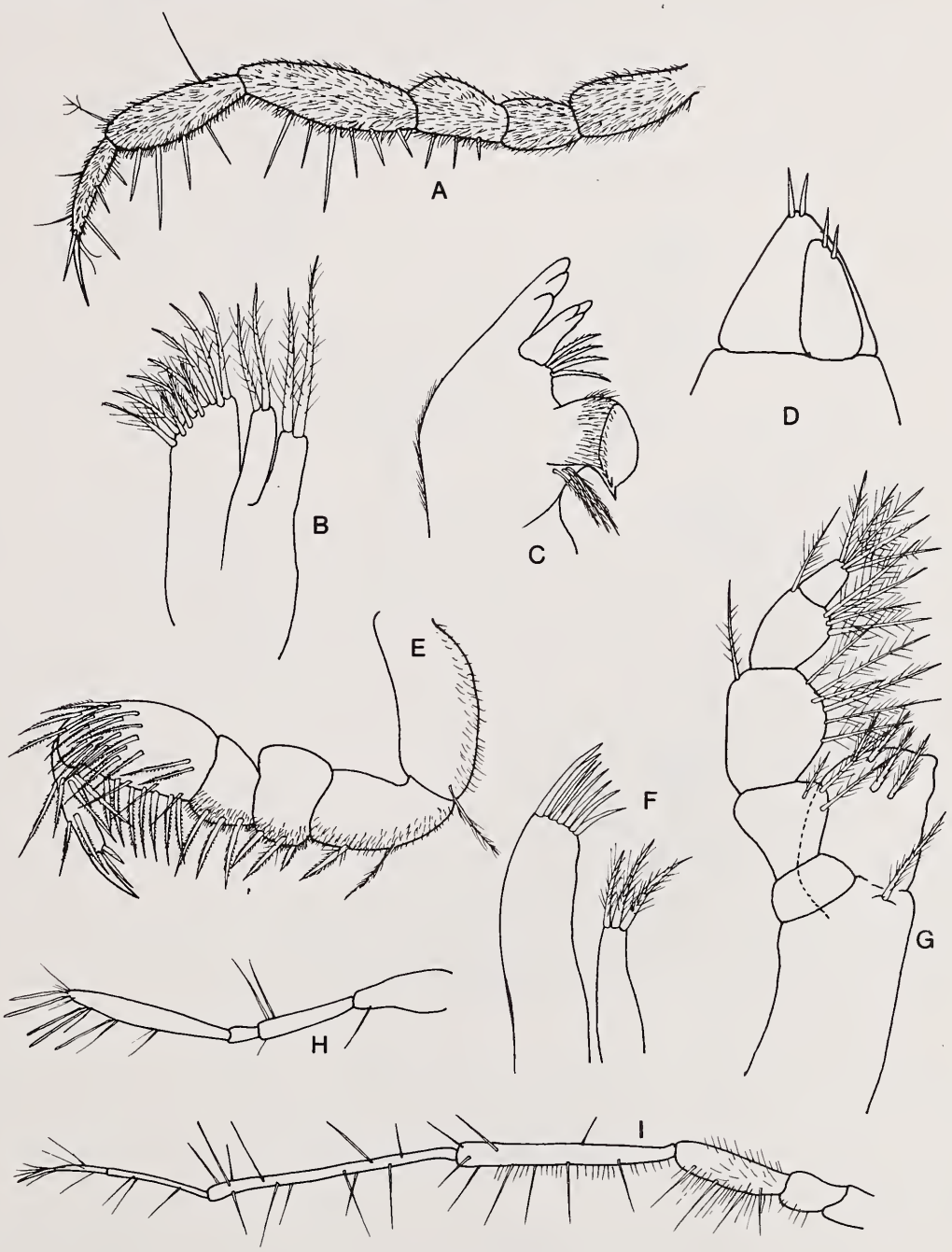

Fig. 8. *Spinarcturus natalensis* gen. et sp. nov.
A. Pereiopod VII. B. Maxilla 2. C. Mandible. D. Uropod apex. E. Pereiopod I. F. Maxilla 1. G. Maxilliped. H. Antennule. I. Antenna.

Pereiopods II to IV essentially similar to pereiopods V to VII, latter with more elongate propodi and carpi. Pereiopods more or less covered with fine short setules and adhering debris.

Rami of penis united almost to apex, latter tapered, finely setose.

Pleopod 1 relatively unspecialized, with proximal indentation in endopod, both rami apically rounded, with numerous plumose setae.

Pleopod 2 both rami apically rounded, with plumose setae; stylet of endopod sabre-shaped, almost twice length of ramus, apically acute.

Uropod with strong ridge near outer margin, outer ramus small, triangular, inner ramus less than half width of outer, with two subapical spines.

Female. Similar to male, but pereionites II to IV wider; broodpouch formed by four pairs of oostegites.

Material

Holotype SAM–A15473 1 ♂ TL 6,0 mm SM 86 27°59,5′S 32°40,8′E 550 m

Allotype SAM–A15473 1 ovig. ♀ TL 8,2 mm SM 86

3 ♂♂ 2 ♀♀ 1 ovig. ♀ 2 juvs SM 86

SAM–A15474 1 ♂ 2 juvs SM 103

Remarks

Deciding on the generic position of the present species gives rise to some difficulty. Pereionite IV is not elongate, which rules out *Astacilla*, *Neastacilla*, *Arcturella*, *Arcturina*, *Arcturopsis*, *Parastacilla* and *Arcturinoides*. The head is not fused with the first pereionite, which eliminates *Pleuroprion*, *Antarcturus* and *Idarcturus*. The antenna is shorter than the body, and has a flagellum of three articles, which rules out *Antarcturus*, *Arcturus*, and *Dolichiscus*. Pleopod 1 in the male is not specialized or furrowed as in *Austroarcturus*, *Microarcturus*, *Antarcturus* and *Holidotea*. The elongate stylet of the second pleopod of the male is reminiscent of *Arcturinoides* and *Arcturina* but does not have a trifid apex as in these latter. The first pleopod with its proximal indentation again resembles that of *Arcturina* and *Arcturinoides*. The pereiopods, however, are not differentiated as they are in these genera. The creation of a new genus for this material would thus seem to be warranted.

The specific name is derived from the Province of Natal.

Family **Cirolanidae**

Excirolana bicornis sp. nov.

Figs 9–10

Description

Male. Body width about half length, widest at pereionites II and VI. Head with dorsolateral eyes; two elongate slightly curved apically rounded 'horns' anterior to eyes, length of 'horns' varying with total length. Frontal lamina distally rounded, dorsally visible between antennal bases, proximally narrowed.

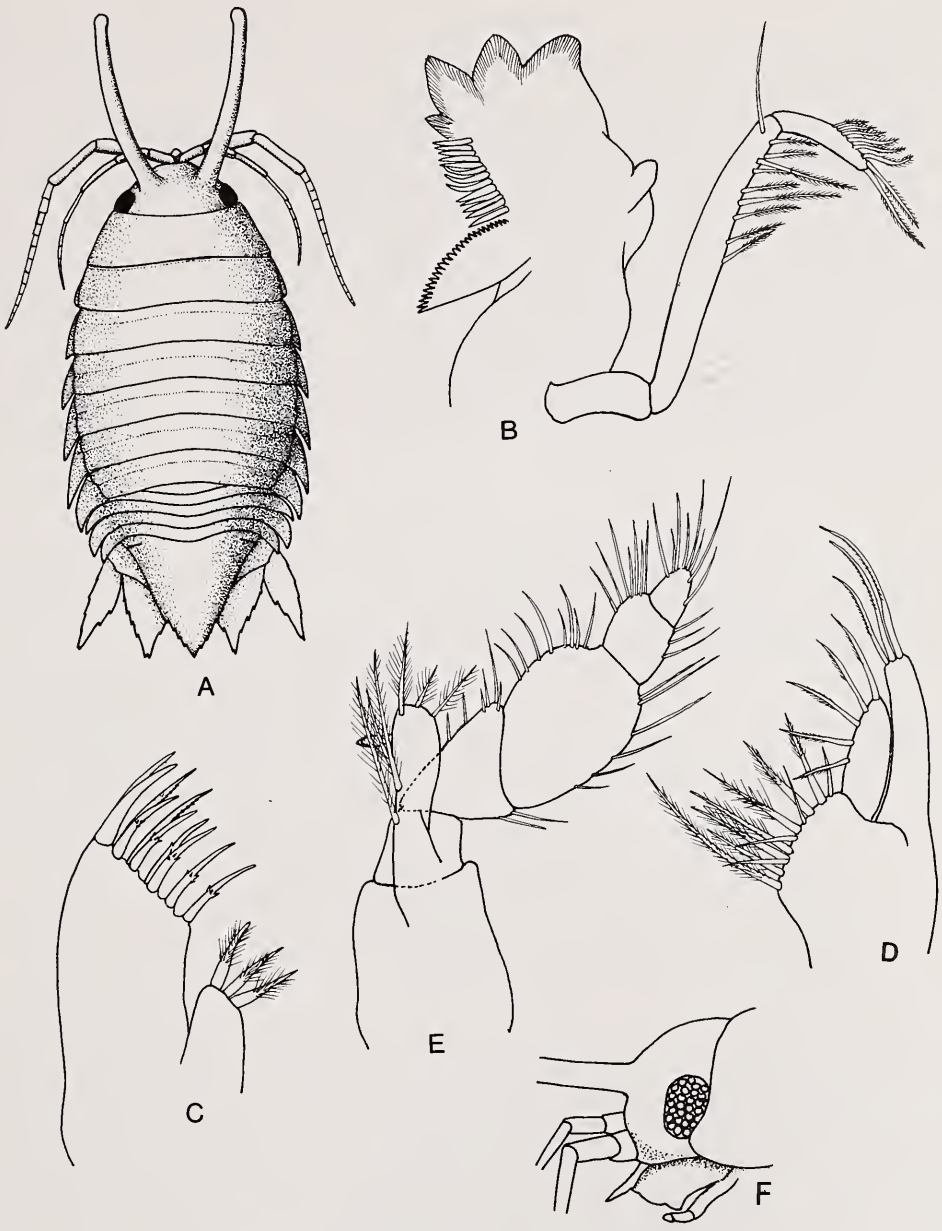

Fig. 9. *Excirolana bicornis* sp. nov.
A. ♂ dorsal view. B. Mandible. C. Maxilla 1. D. Maxilla 2. E. Maxilliped. F. Head of ♂ in lateral view.

Clypeus acutely pointed in lateral view. Pereionites unsculptured except for faint, impressed line. All coxae pointed, those of pereionites IV to VII being elongate-acute. Pleotelson triangular, distal margin dentate, apically acute.

Antennal peduncle 3-segmented, third segment elongate; flagellum of eight to nine articles.

Antenna longer than antennule, peduncle 4-segmented, terminal segment longest, flagellum of fourteen articles.

Mandible with 3-segmented palp, middle segment nearly three times length of basal segment; incisor 4-dentate; setal row of fourteen to sixteen short

spine-like setae; molar process with numerous small teeth on upper surface.

Maxilla 1 with three setae on inner ramus, ten dentate and simple spines on apex of outer ramus.

Maxilla 2 with several plumose setae on inner ramus, inner lobe of outer ramus with five setae, outer lobe with three setae.

Maxillipedal endite narrow, armed with five plumose setae and single coupling hook; palp 5-segmented, third segment longest and broadest, all segments setose.

Pereiopod I with sensory spines on ventral margin of propodus, carpus and merus, carpus very short.

Pereiopod VII armed with clusters of serrate spines on propodus, carpus, merus and ischium.

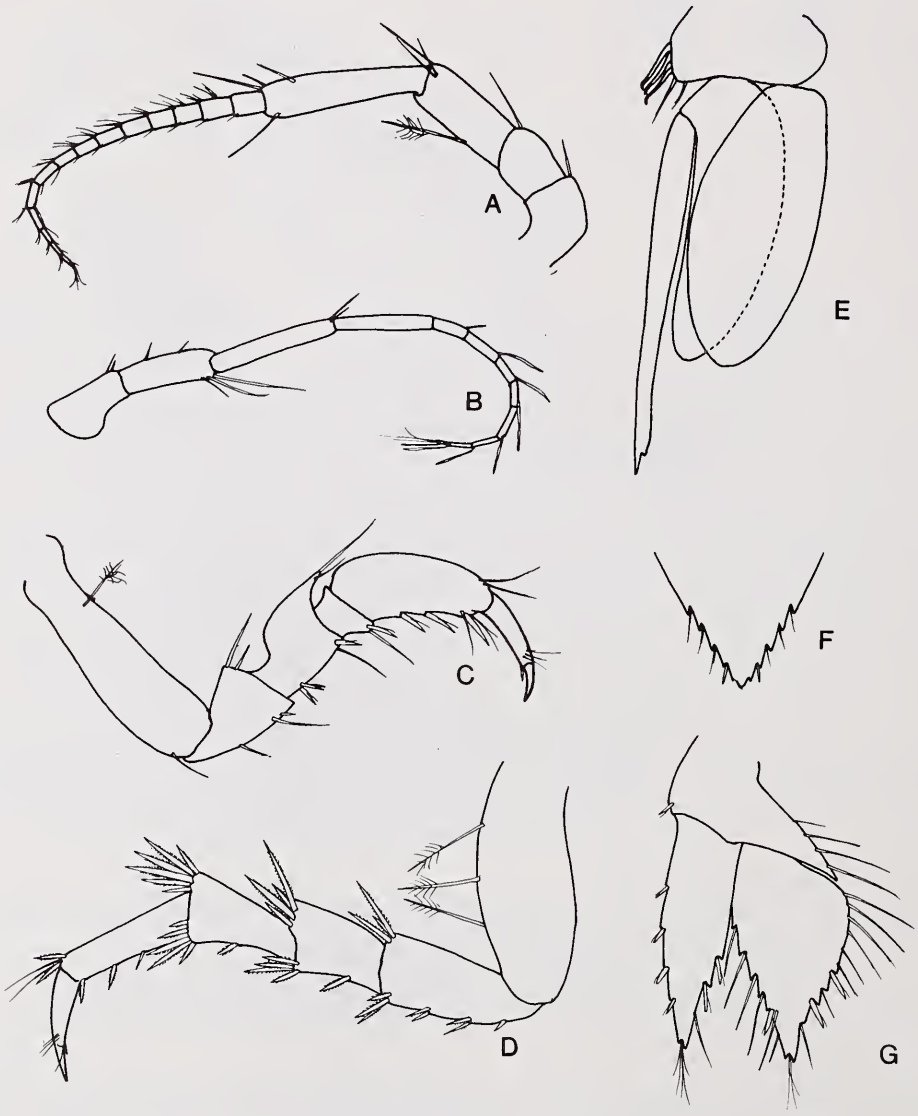

Fig. 10. *Excirolana bicornis* sp. nov.
A. Antenna. B. Antennule. C. Pereiopod I. D. Pereiopod VII. E. Pleopod 2 ♂.
F. Apex of telson. G. Uropod.

Pleopod 2 with stylet attached to base of endopod, extending well beyond both rami, apically tridentate.

Uropod with inner ramus broader than outer, margins serrate, apically narrowed, with several setae and few spines on outer margin.

Female. Similar to male, but lacking 'horns' on head.

Material

Holotype SAM–A15469 1 ♂ TL (excl. horns) 5,6 mm SM 86 27°59,5′S 32°40,8′E 550 m
Allotype SAM–A15469 1 ♀ (with oostegites) 5,5 mm SM 86
Paratypes SAM–A15469 3 ♂♂ 5 ♀♀ 7 juvs SM 86

Remarks

Sexual dimorphism in *Excirolana* has been recorded only in one other species, *E. kumari* Bowman, 1971, from Malaysia. In this species the male bears a pair of triangular horns at the dorsal posterolateral corners of the head, two slender lateral horns on pereionites I and II, plus a mediodorsal spine on pereionite II.

The distinctive pair of horns anterior to the eyes on the head of the male (from which is derived the specific name), immediately separates *E. bicornis* from *E. kumari*.

Cirolana caeca sp. nov.

Figs 11–12

Description

Body width slightly more than half length, strongly convex dorsally, widest at pereionites IV and V, coxae well developed, leaf-shaped; no dorsal sculpture other than impressed line on pereionite VII. Pleon consisting of five segments plus pleotelson, lateral margin of first pleonite overlapped by coxae of last pereionite; lateral margin of fifth pleonite overlapped by fourth; pleotelson wider than long, distally rounded, distal margin crenulate.

Eyes absent.

Antennule shorter than antenna, third peduncular segment longest, flagellum of five articles.

Antenna with terminal peduncular segment longest, flagellum of eleven articles.

Mandibular palp 3-segmented, middle segment longest, bearing simple and plumose spines; incisor of four broad teeth; setal row of ten curved spine-like setae; molar process with marginal row of teeth.

Maxilla 1 inner ramus short, with three apical plumose setae; outer ramus with several dentate and simple spines.

Maxilla 2 inner ramus with five plumose setae, inner lobe of outer ramus with four simple setae, outer lobe with three.

Maxillipedal endite short, with one coupling hook and four plumose setae; palp 5-segmented, middle segment broadest and longest.

Pereiopod I shorter than following pereiopods, carpus short and triangular, ventral margins of propodus, carpus, and merus bearing few sensory spines. Pereiopod VII with serrate spines on ventral and distal margins of segments.

Penial processes digitiform.

Pleopod 2 male with stylet on inner ramus longer than rami, apically with slender spine and subterminal blunt tooth.

Uropod with both rami distally narrowly rounded, inner ramus broad, with sparse plumose setae.

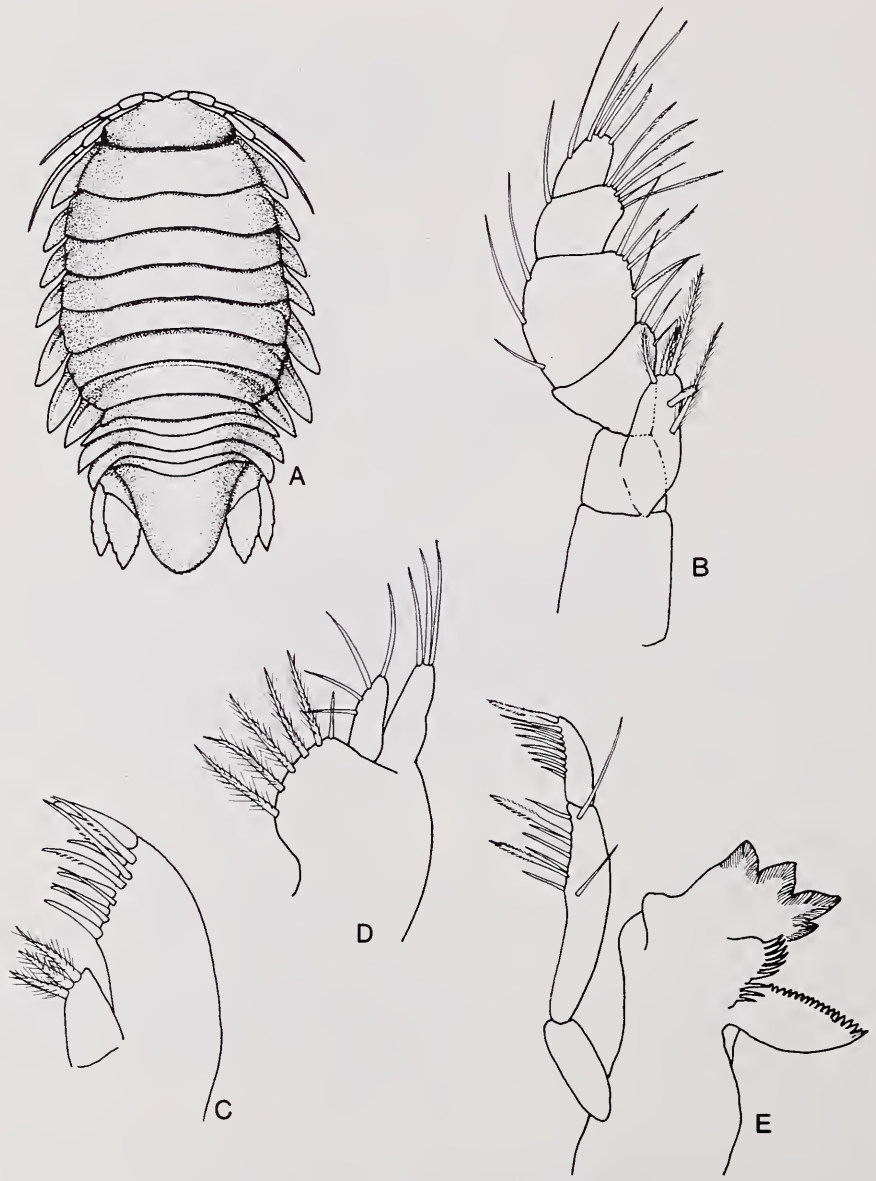

Fig. 11. *Cirolana caeca* sp. nov.
A. ♂ dorsal view. B. Maxilliped. C. Maxilla 1. D. Maxilla 2. E. Mandible.

Material

Holotype SAM–A15468 1 ♂ TL 3,9 mm SM 78 27°31,6′S 32°50,0′E 750 m
Allotype SAM–A15468 1 ovig. ♀ 4,2 mm SM 78
Paratypes SAM–A15468 1 ♂ TL 3,2 mm 5 ♀♀ TL 2,8 mm–4,0 mm 3 ovig. ♀♀ TL 3,6 mm–4,0 mm SM 78

Remarks

This very distinctive species differs markedly in body shape from other blind species of *Cirolana*, such as *C. californiensis* Schultz and *C. poissoni* Monod.

The specific name is derived from the lack of eyes.

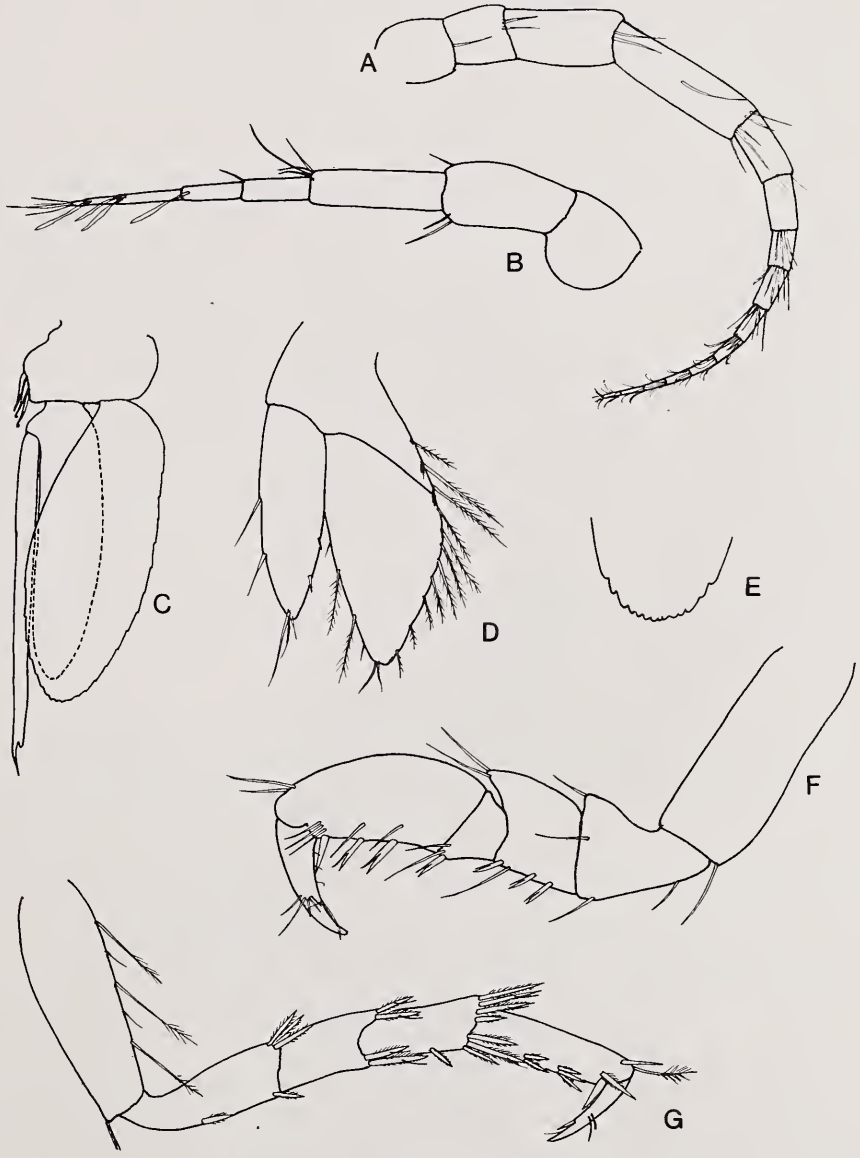

Fig. 12. *Cirolana caeca* sp. nov.
A. Antenna. B. Antennule. C. Pleopod 2 ♂. D. Uropod. E. Apex of telson. F. Pereiopod I. G. Pereiopod VII.

Family **Sphaeromatidae**

Bathycopea typhlops Tattersall

Fig. 13

Bathycopea typhlops Tattersall, 1905: 12, 65, pl. 3. Loyola e Silva, 1971: 216, figs 2–3. Schultz, 1973: 275.

Previous record

Off County Kerry, Ireland.

Material

SAM–A15461 2 ♂♂ 3 ♀♀ 1 ovig. ♀ 3,9–5,3 mm SM 103

Remarks

This is only the second record of this remarkable species. Tattersall (1905) recorded *B. typhlops* from five stations off the Irish coast, in depths ranging from about 400 to 830 metres, and in all cases the bottom substrate was fine sand. The length of the adult male and female from Ireland was 5,0 mm, agreeing well with the present material. No differences in proportions or in the appendages could be detected between Tattersall's and Loyola e Silva's figures and descriptions, and the present specimens. The huge distance between these two records can only be explained by a lack of sampling of the appropriate substrate.

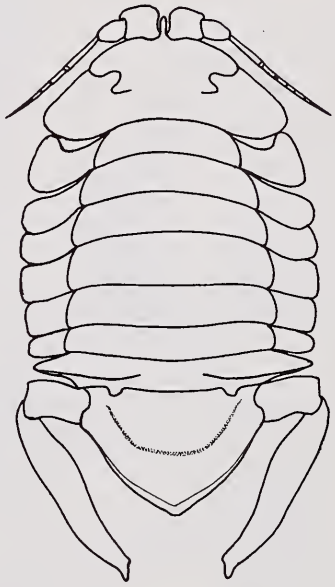

Fig. 13. *Bathycopea typhlops* Tattersall, dorsal view.

Family **Serolidae**

Serolis brinki sp. nov.

Figs 14–15

Description

Male. Body longer than wide, lacking spines and tubercles on dorsum. Head with anterolateral angles acute, slightly produced, anterior margin

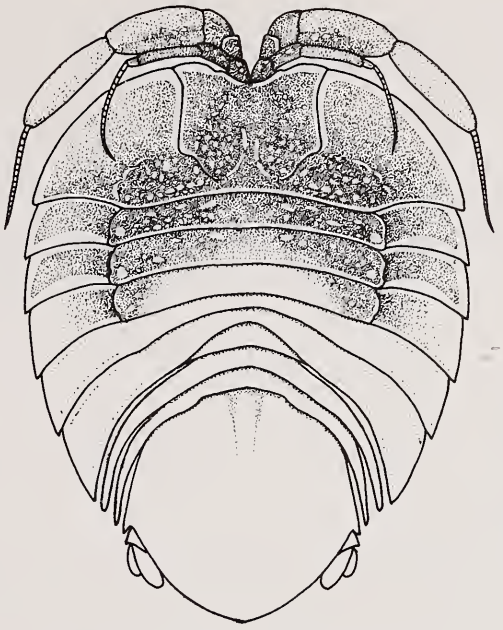

Fig. 14. *Serolis brinki* sp. nov.

medially emarginate, eyes entirely absent. Coxal plates marked off by sutures on pereionites II to IV, coxal plate of pereionite VII not extending beyond pleural plates of second and third pleonites. Pleotelson with very slight rounded median ridge, more strongly indicated proximally, becoming obsolete distally; small lateral point at uropodal insertion. Antennular peduncle longer than flagellum, latter of twenty articles.

Antennal peduncle about equal in length to entire antennule, flagellum of fourteen articles.

Left mandible with lacinia tridentate, right mandible with incisor somewhat expanded, with two strong spines and rounded tubercles; lacinia process distally dentate.

Maxillipedal palp 3-segmented, distal segment well developed.

Pereiopod I, palm of propodus with alternating closely packed slender bifid and broad finely setulose setae; distal margin of carpus with two short setae and few fine setules.

Pereiopod II with double row of eight stubby, bristled setae on palm, distal margin with several simple setae.

Pereiopod VII slender, elongate, with setae on all segments except basis.

Pleopod 2 with distal portion of endopodal stylet about three times longer than proximal portion.

Uropod with exopod well developed, oval, shorter than endopod.

Colour pattern (when alive): only anterior half of dorsum pigmented red-grey; posterior half white. Pigment present on antennal and antennular peduncles, with white dapples on head and terga. Head and anterior four pereionites with broad hyaline margins.

Material

Holotype SAM–A15460 1 ♂ TL 8,6 mm SM 103 28°31,7′S 32°34,0′E 680 m

Remarks

This blind species of *Serolis* closely resembles two previously recorded deep-water species, viz. *S. vemae* Menzies, 1962, from the North and South Atlantic, and *S. menziesi* Hessler, 1970, from the South Atlantic off Brazil, but differs from both.

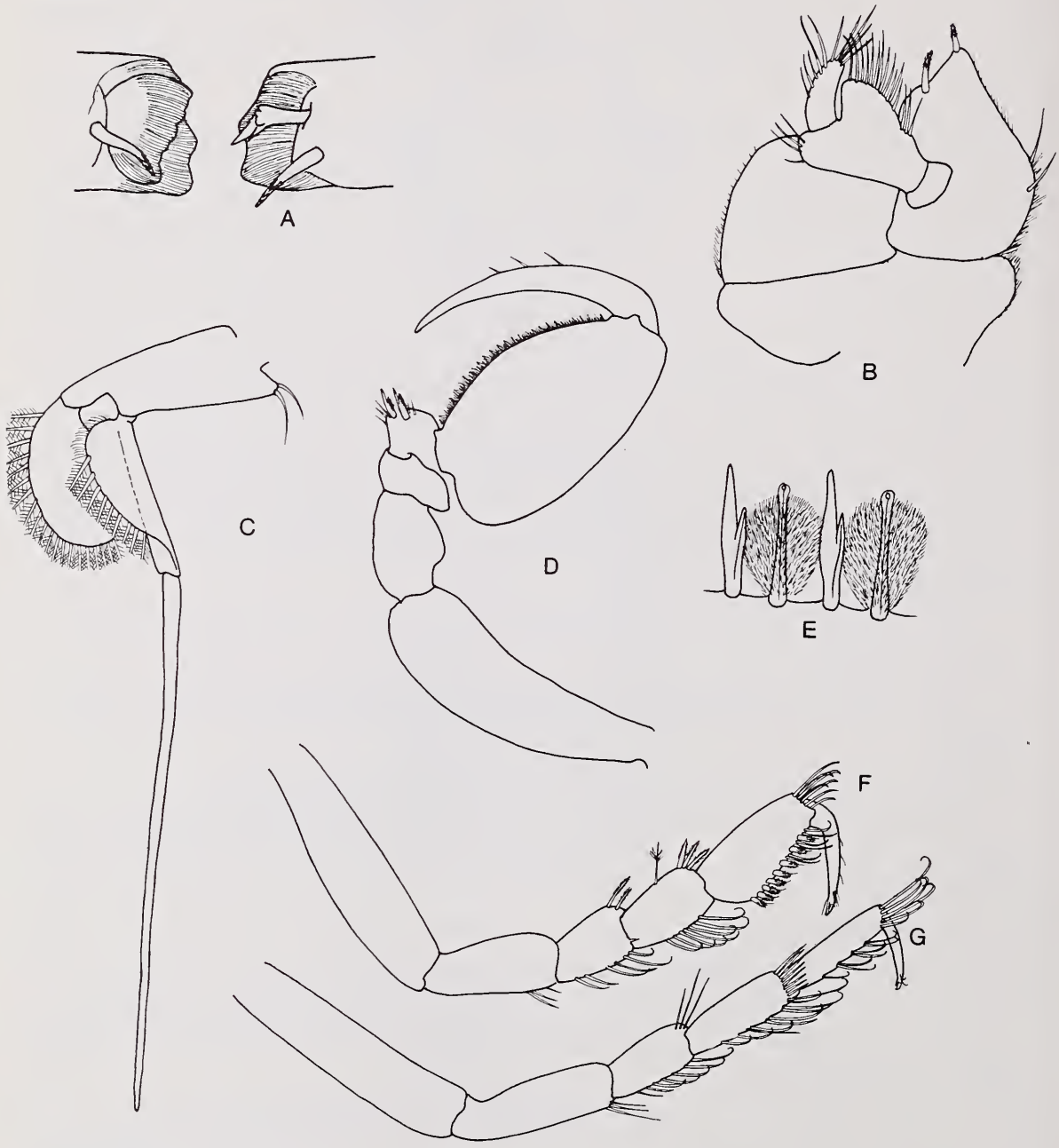

Fig. 15. *Serolis brinki* sp. nov.

A. Inner view of mandibles. B. Maxilliped. C. Pleopod 2 ♂. D. Pereiopod I. E. Spines on palm of propodus, pereiopod I. F. Pereiopod II. G. Pereiopod VII.

S. menziesi does not have a lateral spine on the pleotelson, the uropodal exopod is minute and the pleotelson possesses a triangular flattened proximal area.

In *S. vemae* the uropodal exopod is also much smaller than in *S. brinki*, the pleotelson also possesses a flattened proximal area, but lacks a lateral spine.

S. brinki is the first species of the genus recorded in South African waters, and is named for Dr C. van der Merwe Brink, President of the South African Council for Scientific and Industrial Research.

Family **Stenetriidae**

Stenetrium abyssale Wolff

Stenetrium abyssale Wolff, 1962: 25, figs 1–5.

Previous records

Kermadec Trench (north-east of New Zealand) and Tasman Sea, 4510–4540 m.

Material

SAM–A15470 1 ovig. ♀ 5,3 mm 1 ♂ 3,0 mm SM 86
SAM–A15471 1 ♀ 5,4 mm 4 ♂♂ 5,0 mm–5,8 mm SM 103

Remarks

Wolff (1962) gives the dimensions of 9,9 mm TL ♂ and 8,6 mm TL ♀. The present specimens, including an ovigerous female, are all less than 6 mm in length. This is the only difference from the Kermadec material, the appendages and body shape agreeing exactly with Wolff's description.

Family **Haploniscidae**

Haploniscus gernekei sp. nov.

Fig. 16

Description

Body about twice longer than wide. Anterolateral margins of pereionites and pleotelson with broad hyaline border. Lateral margin of pleotelson continuous with pereion. Distal margin of pleotelson convex, distolateral corners not produced beyond medial margin. Rostrum acute, slightly upturned, with small tubercle on each side of base; frontal margin excavate on either side of rostrum. Lateral margin of pereionite IV squarely truncate. Pleopod 1 in male with rami fused, distal margin straight, with seven setae on each side, distolateral portion tapering to narrowly rounded apex. Uropods dorsally visible, extending almost to level of medial pleotelsonic margin.

Material

Holotype SAM–A15454 1 ♂ TL 2,8 mm SM 103 28°31,7′S 32°34,0′E 680 m

Allotype SAM–A15454 1 ♀ SM 103
8 ♂♂ 3 ♀♀ SM 103
SAM–A15455 3 ♂♂ 3 ♀♀ SM 86

Remarks

H. gernekei differs from *H. tricornis* Menzies, 1962, which it closely resembles, in the antennular flagellum (six articles in *H. tricornis*, five in *H. gernekei*, and the relative lengths of the articles differing); the first pleopod of the male, the distolateral angles being more produced than in *H. tricornis*; in the uropod extending at least to the level of the medial pleotelsonic margin or slightly beyond, and in lacking a lateral ridge on the dorsum of the pleotelson.

The species is named for Mr D. Gerneke, previously of the South African Museum, for his invaluable assistance on both the *Meiring Naude* cruises.

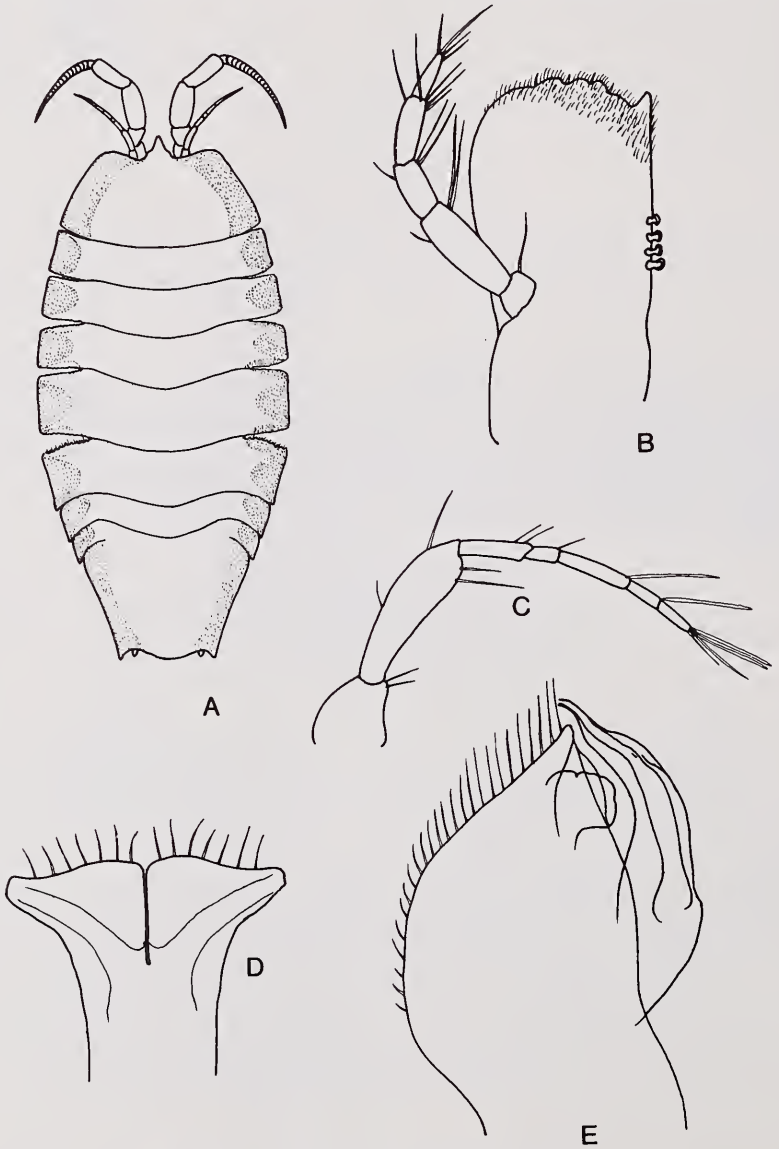

Fig. 16. *Haploniscus gernekei* sp. nov.
A. Holotype dorsal view. B. Maxilliped. C. Antennule. D. Apex of pleopod 1 ♂. E. Pleopod 2 ♂.

Family **Eurycopidae**

Eurycope glabra sp. nov.

Figs 17–18

Description

Body glabrous, head and first four pereionites narrower than rest of body. First four pereionites narrow, anterolateral angles acute; pereionite V broader than VI, lateral corners rounded; pereionite VII wider than VI, distal margin slightly concave. Pleotelson of single segment, broader than long, distally broadly rounded, uropods just visible dorsally. Rostrum distally rounded, with eight setae.

Basal antennular segment broad, with inner distal angle produced, second segment narrow; flagellum of about fifteen articles.

Mandibular palp with third segment strongly rounded, with several setae and fringed spines; molar process broad, truncate, with five marginal setae.

Maxilla 1 with several simple curved spines distally, inner ramus with single strong distal seta.

Maxilla 2 slender, with several elongate distal setae. Epipodite of maxilliped with strong rounded process on outer margin; three basal palp segments broad, second segment longest, with two spines on outer distal angle; two distal segments narrow, setose; endite narrower than basal palp segments.

Pereiopod I very slender, remaining pereiopods missing.

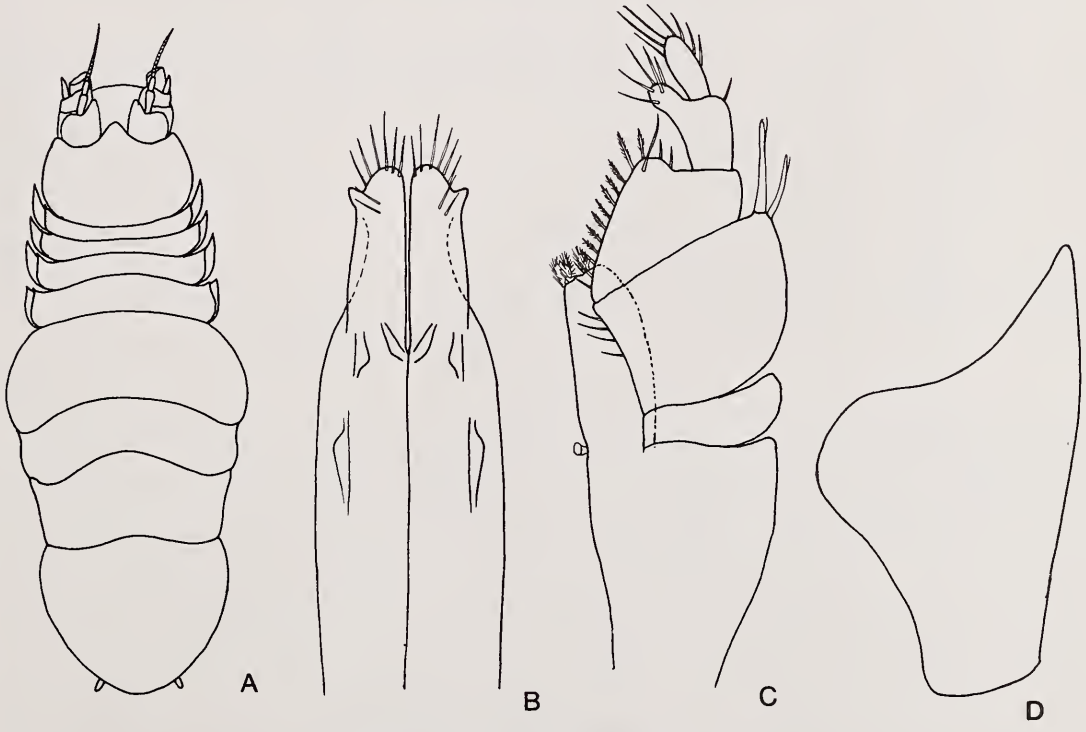

Fig. 17. *Eurycope glabra* sp. nov.
A. Holotype dorsal view. B. Pleopod 1 ♂. C. Maxilliped. D. Epipod of maxilliped.

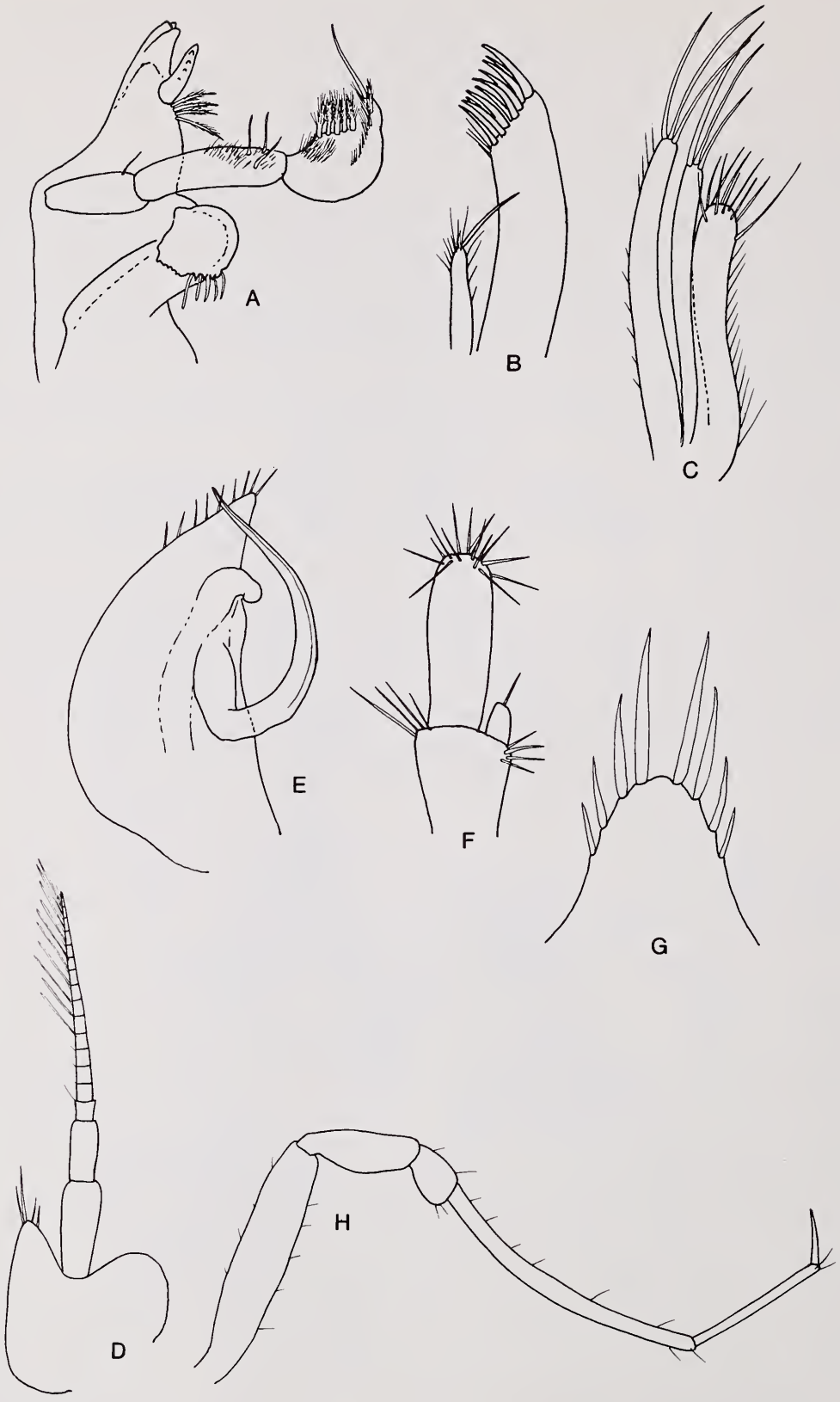

Fig. 18. *Eurycope glabra* sp. nov.
A. Left mandible. B. Maxilla 1. C. Maxilla 2. D. Antennule. E. Pleopod 2 ♂. F. Uropod. G. Rostrum. H. Pereiopod I.

Pleopod 1 in male narrow, elongate, rami distally rounded, with subterminal process on outer margin.

Pleopod 2 with outer margin strongly convex.

Uropod biramous, inner ramus four and a half times longer than outer.

Operculum of female with strong median crest, forming spine-like process proximally.

Material

Holotype SAM–A15452 1 ♂ TL 3,6 mm SM 103 28°31,7′S 32°34,0′E 680 m

Allotype SAM–A15453 1 ♀ TL 3,3 mm SM 60 27°09,6′S 32°58,2′E 800–810 m

Remarks

From Wolff's key (1962: 144) to the species of *Eurycope* the present species would seem to resemble *E. antarctica* Vanhöffen, 1914, but this species does not have acute antero-lateral corners of the first four pereionites, and the pleotelson is not distally as broadly rounded; further, the uropodal exopod is relatively longer, the rostrum not as narrow as in the present material.

The specific name derives from the completely smooth dorsum, entirely lacking in sculpture.

Family **Dendrotionidae**

Acanthomunna spinipes (Vanhöffen)

Fig. 19

Mormomunna spinipes Vanhöffen, 1914: 569, figs 100, 101.
Acanthomunna spinipes: Menzies, 1962: 174. Wolff, 1962: 65.

Previous records

Antarctic (Gauss Station 8.II.1903) 385 m.

Material

SAM–A15463 4 ♂♂ TL 2,5 mm 8 ♀♀ 3 ovig. ♀♀ TL 4,4 mm SM 86
SAM–A15464 2 ♂♂ 1 ♀ SM 103

Remarks

The presence of a uropodal peduncle, pereionites I to III separate, the head not fused with pereionite I, maxilliped palp segments all slender, the presence of a mobile lacinia in the left mandible, an apically truncate molar process, coxae on pereionites II to VII, an antennular flagellum of at least six articles, pereiopods with a single claw, and dorsolaterally inserted uropods, all place the present specimens in the family Dendrotionidae. The presence of eyes indicate the genus *Acanthomunna* (Wolff, 1962: 65). The present material agrees almost exactly with Vanhöffen's description of *A. spinipes*, especially in the structure of the first and second pleopods of the male. While the generally spinose pereion and pleon, and the elongate antennae and pereiopods also

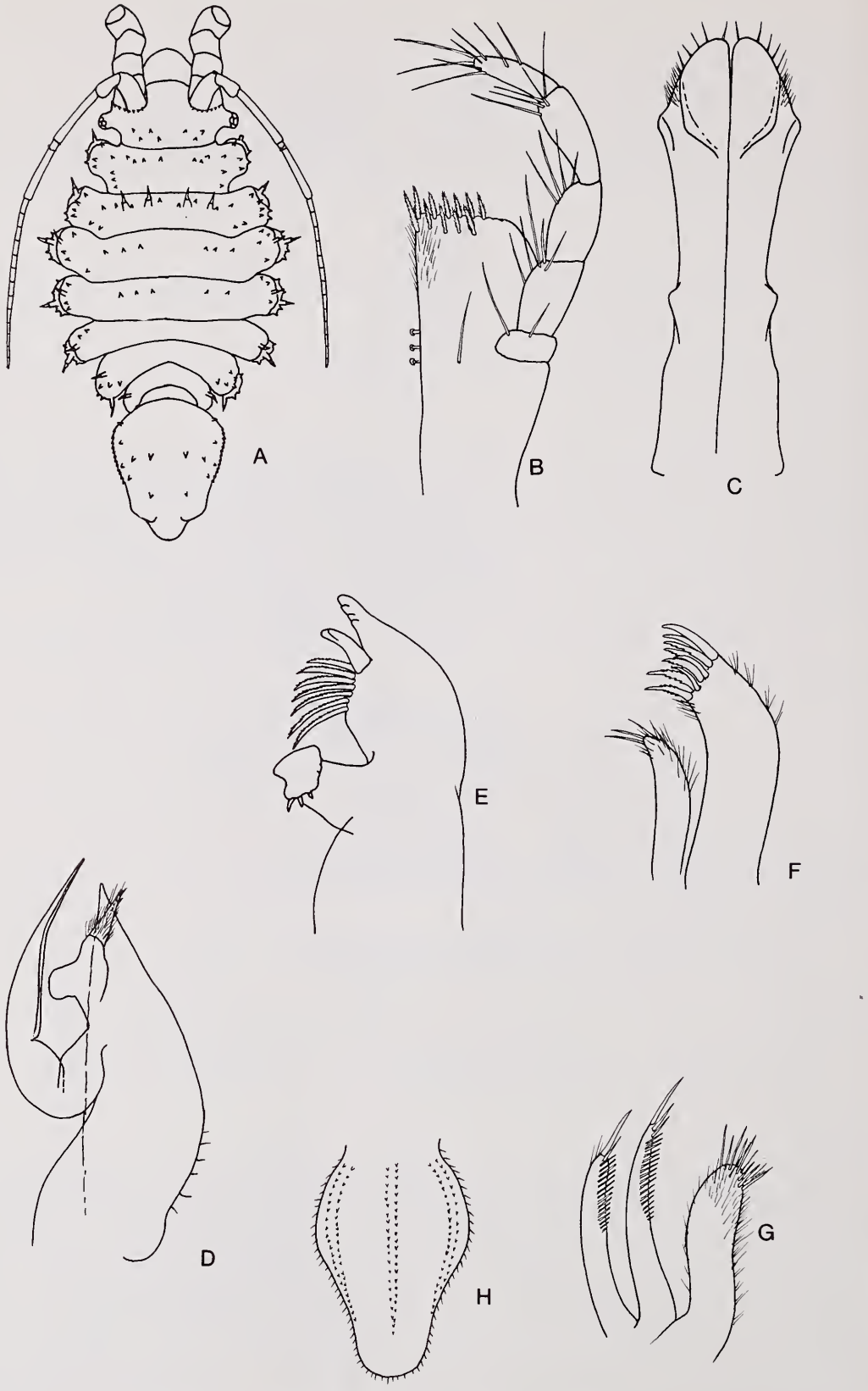

Fig. 19. *Acanthomunna spinipes* (Vanhöffen).
A. Dorsal view. B. Maxilliped. C. Pleopod 1 ♂. D. Pleopod 2 ♂. E. Right mandible. F. Maxilla 1. G. Maxilla 2. H. Operculum ♀.

agree well, unfortunately the spectacularly spinose uropods of *A. spinipes* are absent in all the Natal material.

In one specimen, the base of the uropodal peduncle was still *in situ*. The relatively large insertion for the uropods and the sturdy remnant mentioned indicate a massive uropod of the type figured by Vanhöffen.

Family **Ilyarachnidae**

Ilyarachna wolffi sp. nov.

Fig. 20

Description

Body glabrous, tapering posteriorly. Head with transverse convex portion and broad lateral areas. Pereionite I not as broad as II, both laterally acute. Pereionites II to IV increasing in length, coxae of pereionites posterior to II rounded; posterior margin of pereionite V concave; VI triangular, VII narrower. Pleotelson of two segments, terminal segment longer than broad, distally narrowly rounded.

Antennular basal segment broad, outer distal angle somewhat produced, second segment narrow; flagellum of about fifteen articles.

Mandibular palp slender, 3-segmented, middle segment with two fringed spines, shorter terminal segment with four spines; incisor process a single rounded tooth; molar process narrow, with three terminal setae; strong ridge on inner face of mandible.

Maxilliped with second palp segment very broad and long, third segment triangular, two distal segments short and narrow; endite less than half width of second palp segment, epipodite broad, distally rounded.

Pleopod 1 in male curved, rami distally narrowly rounded, setose.

Uropods missing.

Material

Holotype SAM–A15457 1 ♂ TL 2,9 mm SM 86 27°59,5′S 32°40,8′E 550 m
3 ♂♂ SM 86
SAM–A15458 2 ♂♂ SM 103

Remarks

Three species closely resemble present material. (See Wolff 1962: 94.)

I. triangulata Menzies, 1962, is very similar in body proportions but lacks the acute coxae of the first two pereionites, the mandibular palp is also very different.

I. affinis Barnard, 1920, has acute coxae on the first four pereionites, rather than just the first two.

I. crassipes Barnard, 1920, has rounded coxae of the first two pereionites, while the pleon is about as long as wide.

The species is named for Dr Torben Wolff, for his contributions to isopod biology and taxonomy.

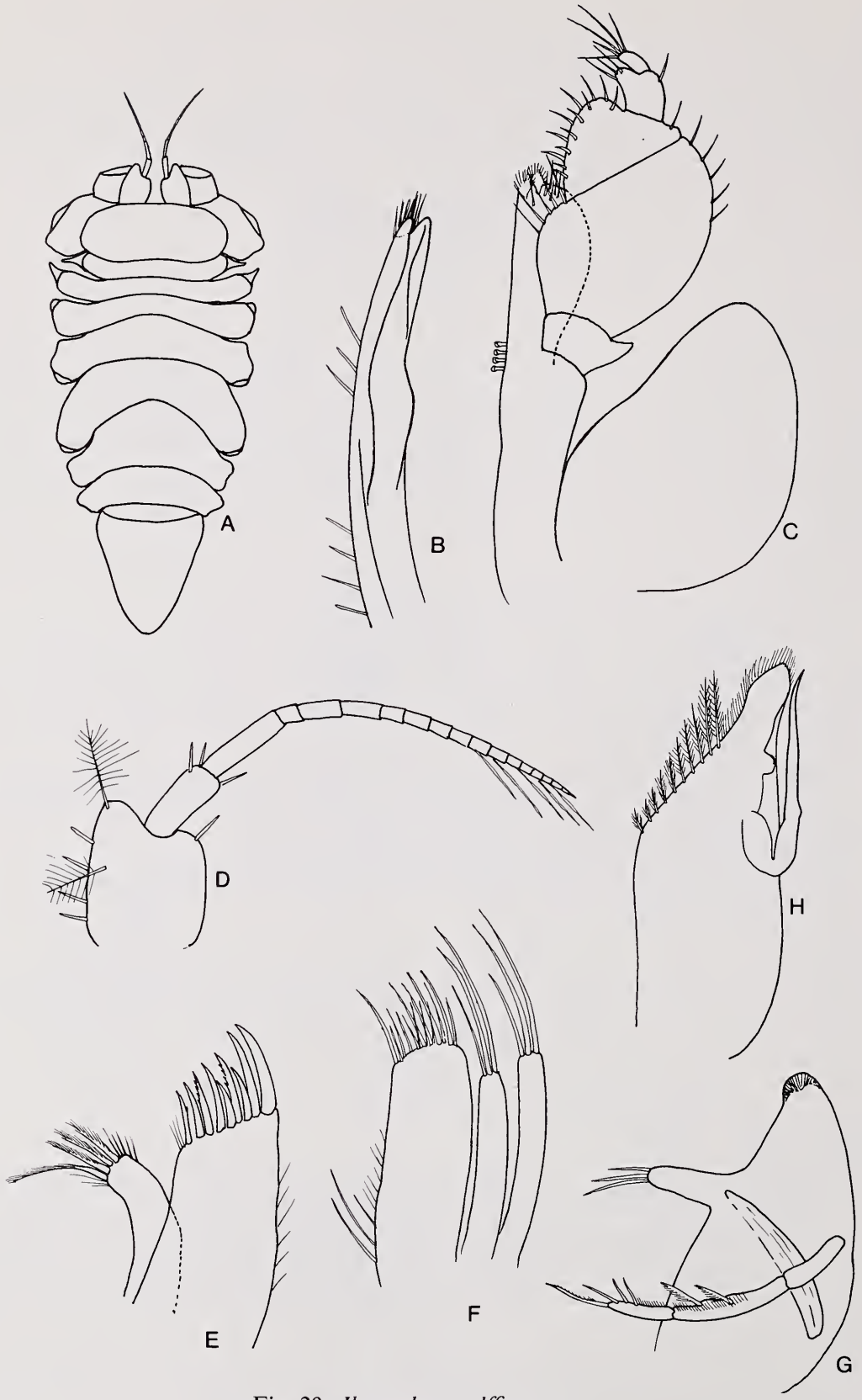

Fig. 20. *Ilyarachna wolffi* sp. nov.
A. Holotype dorsal view. B. Pleopod 1 ♂. C. Maxilliped. D. Antennule. E. Maxilla 1. F. Maxilla 2. G. Mandible. H. Pleopod 2 ♂.

Ilyarachna sp.

Fig. 21

Description

Body markedly spinose. Head with eight spines. Pereionites I to IV with two rows of small spines and several lateral spines; pereionites V to VII with single row of spines. Pleotelson of two segments, terminal segment with several small granules plus single strong pair of spines.

Material

SAM–A15462 2 ♀♀ TL 3,0 mm SM 103

Remarks

As the uropoda and all the pereiopods are lacking from both specimens, specific status is not given, even though a species of *Ilyarachna* with a double row of small spines on the anterior four pereionites does not seem to have been recorded. This species is obviously related to such spinose species as *I. spinosissima* Hansen, *I. argentinae* Menzies, *I. gurjanovae* Menzies, and *I. multispinosa* Menzies

GENERAL DISCUSSION

Of the 21 species of isopod recorded, 15 were taken from either station SM 86 or SM 103, 7 species being common to both stations. The nature of the bottom at both stations was very similar, and as 9 of the 15 species caught are new, it may fairly be said that this is a habitat not previously sampled. A

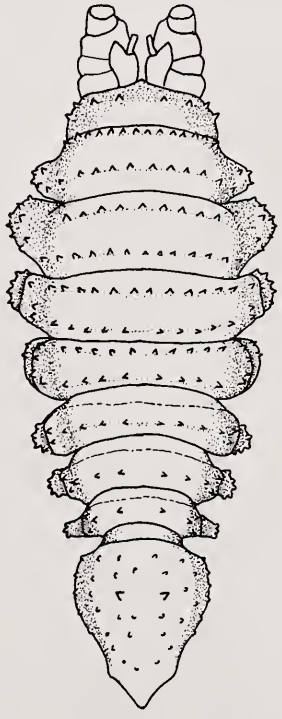

Fig. 21. *Ilyarachna* sp. ♀.

comparison of the two stations (Table 1) and the isopods caught at them will give some idea of the characteristics of this ecotype. The differences in the catch between the stations can to some extent be explained by the difference in fishing ability of the gear used. The heavy dredge, with its 100 cm by 30 cm mouth, would be able to pick up much larger organisms and rocks than could the light biological dredge (see Menzies 1962, fig. 1) with its narrow 100 cm by 10 cm mouth. Thus Alcyonaria and Gorgonacea with attendant isopods such as *Neastacilla* would be caught only by the heavy dredge, while some of the smaller debris-dwelling isopods of the upper few centimetres of substrate such as *Eurycope*, *Serolis* and *Microarcturus* would be caught by the light dredge, but perhaps lost through the wider mesh of the heavy dredge.

TABLE 1

A comparison between two stations and the isopods caught at them.

	SM 86	SM 103
Depth	550 metres	680 metres
Gear	Heavy dredge	Light biological dredge
Bottom	Fine hard mud, overlain with heteropod and pteropod shells, coral fragments, numerous foraminifera, sponge fragments and spicules	Fine hard mud, overlain with heteropod and pteropod shells, coral fragments, numerous foraminifera, sponge fragments and spicules
Non-Isopod organisms caught	Hydroids, gorgonaceans, solitary corals, glass sponges, pycnogonids, small crabs, cumaceans, amphipods, ostracodes, polychaetes, small gasteropods and bivalves	Hydroids, small echinoderms, pycnogonids, amphipods, small crabs, small gasteropods and bivalves.
Isopods caught	*Acanthomunna spinipes* Anthurids — *Excirolana bicornis* — *Gnathia* sp. *Haploniscus gernekei* *Ilyarachna wolffi* — *Microarcturus youngi* — *Neastacilla longispina* — *Spinarcturus natalensis* *Stenetrium abyssale* *Stenetrium dalmeida* *Stenetrium dagama*	*Acanthomunna spinipes* Anthurids *Bathycopea typhlops* — *Eurycope glabra* — *Haploniscus gernekei* *Ilyarachna wolffi* *Ilyarachna* sp. *Microarcturus youngi* *Microarcturus oudops* — *Serolis brinki* *Spinarcturus natalensis* *Stenetrium abyssale* — *Stenetrium dagama*

The affinities of this fauna are not easily apparent, especially with 52 per cent being described as new. The presence of a *Serolis*, and *Stenetrium abyssale* and *Acanthomunna spinipes* indicate possible Antarctic/subantarctic affinities, while five endemic species (*Microarcturus oudops*, *Stenetrium dagama*, *Cirolana imposita*, and two easily recognizable anthurids *Leptanthura laevigata* and *Mesanthura catenula*) show the expected South African component. The unexpected presence of *Bathycopea typhlops* can only be explained by the paucity of collecting in this type of habitat, especially off the west African coast.

ACKNOWLEDGEMENTS

I should like to thank the crew of the R/V *Meiring Naude* and my colleagues of the South African Museum who assisted in the collecting of the material described here. I am grateful to Dr T. E. Bowman of the Smithsonian Institution, and Prof. J. H. Day of the University of Cape Town, who read the manuscript and made many useful criticisms and suggestions.

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